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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/972,953	10/10/2001	Han-Chieh Chang	PENG=4	4810
1444	7590	01/08/2004	EXAMINER	
BROWDY AND NEIMARK, P.L.L.C. 624 NINTH STREET, NW SUITE 300 WASHINGTON, DC 20001-5303			TALBOT, BRIAN K	
			ART UNIT	PAPER NUMBER
			1762	

DATE MAILED: 01/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center">Office Action Summary</p>	Applicati n No. 09/972,953	Applicant(s) CHANG ET AL.	
	Examiner Brian K Talbot	Art Unit 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 17-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 17-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

1. The amendment filed 10/10/03 has been considered and entered. Claims 11-16 have been canceled. Claims 17-26 have been added. Claims 1-10 and 17-26 remain in the application.
2. In light of the amendment filed 10/10/03, the objection of the specification concerning the Title and disclosure has been withdrawn. In addition, the 35 USC 112 rejections have been withdrawn.
3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

4. Claims 1-10 and 17-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted state of the art (pg. 1, lines 9-19) in combination with Purcell et al. (6,322,854) or Cavallaro (6,224,671 B1).

Applicant's admitted state of the art (pg. 1, lines 9-19) teaches forming circuit boards by designing a circuit layout in a computer converting it in a Gerber file, making a negative film based on Gerber file and developing the layout a number of ways.

Applicant's admitted state of the art (pg. 1, lines 9-19) fails to teach forming the circuitry by a spraying/dispensing apparatus which is controlled by the computer data file to dispense coating material onto the substrate.

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Purcell et al. (6,322,854) teaches a multiple head dispensing method whereby a system for dispensing different materials from different dispensing heads is controlled by a computer system (abstract and col. 1 – col. 4).

Cavallaro (6,224,671 B1) teaches a multiple head dispensing method whereby a system for dispensing different materials from different dispensing heads is controlled by a computer system (abstract and col. 1 – col. 7).

Therefore, it would have been obvious for one skilled in the art at the time the invention was made to have modified Applicant's admitted state of the art (pg. 1, lines 9-19) by incorporating a dispensing apparatus as evidenced by either Purcell et al. (6,322,854) or Cavallaro (6,224,671 B1) with the expectation of achieving similar results. In addition the use of the dispensing apparatus would reduce manufacturing cost and provide more precise deposition of the coating materials.

With respect to the materials dispensed and the amount thereof, it is the Examiner's position that these variations are a matter of design choice of a practitioner in the art and would be optimized dependent upon the desired end product use.

Response to Amendment

5. Applicant's arguments filed 10/10/03 have been fully considered but they are not persuasive.

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Applicant argued that the secondary references fail to teach formation of laminated circuits and only teach multiple dispensers for dispensing multiple coatings.

The Examiner agrees in part. While the Examiner acknowledges the fact that the secondary references do not teach formation of laminated circuit board, the references are relied upon for teaching multiple dispensing heads for dispensing different materials on a substrate and not for the product produced. Hence, a combination rejection was instituted. The primary reference failed to specifically teach the method of forming the circuits and the secondary references teach one method for doing such.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K Talbot whose telephone number is (703) 305-3775. The examiner can normally be reached on Monday-Friday 6AM-3PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P Beck can be reached on (703) 308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3775.



Brian K Talbot
Primary Examiner
Art Unit 1762

BKT
January 5, 2004